

Patent claims:

1. A composite product encompassing at least one polyacetal molding and at least one polyolefin molding, which have been bonded at at least one of their surfaces using an adhesion-promoting layer which is substantially composed of a copolymer or of a mixture of these which derives from at least one alpha-olefin and from at least one ethylenically unsaturated carboxylic acid, and/or from at least one ethylenically unsaturated carboxylic acid derivative, where the molar ratio of alpha-olefin to ethylenically unsaturated carboxylic acid and/or to ethylenically unsaturated carboxylic acid derivative is selected so as to obtain composites with a bond strength (measured by the tensile test at 23°C) of at least 0.2 N/mm².
2. The composite product as claimed in claim 1, wherein the composites have a bond strength (measured by the tensile test at 23°C) of at least 0.5 N/mm².
3. The composite product as claimed in claim 1, wherein the polyacetal molding is a molding comprising polyoxymethylene homo- or copolymer, in particular a molding comprising a copolymer containing repeat units of polyoxymethylene and of polyoxyethylene and/or of polyoxybutylene.
4. The composite product as claimed in claim 1, wherein the polyolefin molding is a molding comprising polyethylene.
5. The composite product as claimed in claim 1, wherein the adhesion promoters used comprise copolymers derived from an alpha-olefin, in particular ethylene, and from at least one ethylenically unsaturated carboxylic acid and/or from at least one ethylenically unsaturated carboxylic acid derivative.
6. The composite product as claimed in claim 5, wherein the alpha-olefin is ethylene, copolymerized with acrylic acid, with methacrylic acid, with acrylic ester, with methacrylic ester, with itaconic anhydride, with maleic anhydride, or with a combination of these.

7. The composite product as claimed in claim 1, wherein the adhesion promoters used comprise ethylene-vinyl ester copolymers, in particular ethylene-vinyl acetate copolymers.
- 5 8. The composite product as claimed in claim 1, wherein the adhesion promoters used comprise a copolymer derived from at least one alpha-olefin and from at least one ethylenically unsaturated carboxylic acid and/or from at least one ethylenically unsaturated carboxylic acid derivative modified with at least one further
10 ethylenically unsaturated carboxylic acid and/or with at least one further ethylenically unsaturated carboxylic acid derivative.
9. The composite product as claimed in claim 8, wherein the adhesion promoters used comprise an ethylene-vinyl ester copolymer
15 copolymerized/modified with acrylic acid, with methacrylic acid, with acrylic ester, with methacrylic ester, with itaconic anhydride, with maleic anhydride, or with a combination of these, in particular comprise an ethylene-vinyl acetate copolymer
20 copolymerized/modified with acrylic and/or methacrylic ester.
10. The composite product as claimed in claim 1, wherein the composite comprises a POM molding and, bonded thereto via a layer
25 composed of adhesion-promoting polymer, a polyolefin molding, where the adhesion-promoting polymer is selected from the group consisting of ethylene-vinyl ester copolymers or ethylene homopolymers modified with ethylenically unsaturated carboxylic esters and/or with unsaturated carboxylic anhydrides, in particular ethylene-vinyl acetate, and of ethylene-acrylic ester copolymers,
30 ethylene-methacrylic ester copolymers, and mixtures of these.
11. The composite product as claimed in claim 1, wherein the adhesion promoters used comprise copolymers which derive from ethylene and vinyl acetate (EVA) or from ethylene and acrylic esters, in particular methyl acrylate, ethyl acrylate, propyl acrylate, or butyl
35 acrylate, and which have also, where appropriate, been copolymerized/modified with anhydrides of unsaturated carboxylic acids, in particular with maleic anhydride.

12. The composite product as claimed in claim 1, wherein the adhesion promoters used comprise a copolymer from the group consisting of ethylene-vinyl acetate-maleic anhydride terpolymer, ethylene-butyl acrylate copolymer, ethylene-ethyl acrylate copolymer, ethylene-methyl acrylate copolymer, ethylene-glycidyl methacrylate copolymer, ethylene-methyl acrylate-glycidyl methacrylate terpolymer, ethylene-ethyl acrylate-glycidyl methacrylate terpolymer, ethylene-butyl acrylate-glycidyl methacrylate terpolymer, ethylene-methyl acrylate-maleic anhydride terpolymer, ethylene-ethyl acrylate-maleic anhydride terpolymer, and ethylene vinyl acetate modified with maleic anhydride.
13. The composite product as claimed in claim 1, wherein the adhesion-promoting copolymers used have a melting point or a Vicat softening point above 50°C.
14. The composite product as claimed in claim 1, which has at least three layers and has at least one layer sequence as follows: polyacetal, adhesion-promoting layer, and polyolefin.
15. The composite product as claimed in claim 1, which has five layers and has the following layer sequence: polyacetal, adhesion-promoting layer, polyolefin, adhesion-promoting layer, and polyacetal, or polyolefin, adhesion-promoting layer, polyacetal, adhesion-promoting layer, and polyolefin.
16. A process for producing the composite product as claimed in claim 1, encompassing the following measures:
- a) producing a polyacetal molding from a polyacetal-containing molding composition in a manner known per se,
 - b) applying an adhesion-promoting layer comprising at least one of the polymers as claimed in claim 1 to at least one surface of the polyacetal molding in a manner known per se, and
 - c) applying a polyolefin-containing molding composition to the adhesion-promoting layer produced in step b) so as to produce a composite of polyacetal molding and polyolefin molding.

17. A process for producing the composite product as claimed in claim 1, encompassing the following measures:
- 5 a) producing a polyolefin molding from a polyolefin-containing molding composition in a manner known per se,
- b) applying an adhesion-promoting layer comprising at least one of the polymers as claimed in claim 1 to at least one surface of the polyolefin molding in a manner known per se, and
- 10 c) applying a polyacetal-containing molding composition to the adhesion-promoting layer produced in step b) so as to produce a composite of polyacetal molding and polyolefin molding.
18. The process as claimed in claim 16 or 17, wherein the polyolefin molding and the polyacetal molding are produced by injection molding and/or by extrusion.
- 15 19. The process as claimed in claim 16 or 17, wherein the adhesion-promoting layer is applied by injection molding and/or by extrusion.
- 20 20. The use of the composite products as claimed in claim 1 for producing components which come into contact with fuels, in particular for producing fuel-conveying units, valves, tanks, or filler necks.
- 25 21. The use of the composite products as claimed in claim 1 for producing snap connectors, gearbox components, deflector rollers, gears, adjustment levers, pipes, or packaging materials.